Amendments to the Specification

Replace the paragraph beginning on page 5 at line 1 with the following:

In the figure, reference numeral 10 indicates the simulator. The simulator 10 has computer-aided design (CAD) programs or package 10a (explained later) and a main unit 12 comprising a microcomputer (on which the programs are downloaded) having a CPU 12a, a memory 12b and a group of boards (generally indicated by 12c). The simulator main unit 12 is connected, through an input/output interface 14, with an electronic control unit (illustrated as "ECU" in the figure) 16 which corresponds to the controller or control system of an automatic transmission mounted on a vehicle.

Replace the paragraph starting on page 9 at line 11 with the following:

Since the characteristic features of the invention reside in the simulator 10, a more ~~detained~~ detailed explanation of the shift control performed by the ECU 16 is omitted.

Replace the paragraph starting on page 16 at line 25 with the following:

FIG. 17 shows a simulation result indicative of the clutch transmission torque Tc (more precisely, the 1st-speed clutch transmission torque) conducted along the shift control algorithm stored in the ECU 16 using the models illustrated in FIG. 5 with the calculation cycle of only the basic cycle (i.e., 200 μsec.). Since the non-linear clutch section (and the integral factor) was simulated using the same interval of 200 μsec., the simulation result reveals that the calculated value (marked by "b") diverged from a desired value (marked by "a") in the shift control algorithm. Thus, the simulation accuracy is insufficient and this makes it impossible to verify and evaluate the shift control algorithm stored in the ECU [[15]] 16 sufficiently. Here, the desired value is a real-world value obtained by an appropriate manner.

Replace the paragraph starting on page 17 at line 7 with the following:

Figure 18 shows another simulation result indicative of the same clutch transmission torque Tc using the configuration wherein the models are divided into the basic calculation cycle block and the high-speed calculation cycle block. Since the two kinds of the calculation cycles of 20 μsec. and 20 μsec. are used, the simulation result reveals that the calculated value (marked by "b") converged to the desired value (marked by "a") in the shift control algorithm, therby enabling verification and evaluation of the shift control algorithm stored in the ECU [[15]] 16 satisfactorily.